WHAT IS CLAIMED IS:

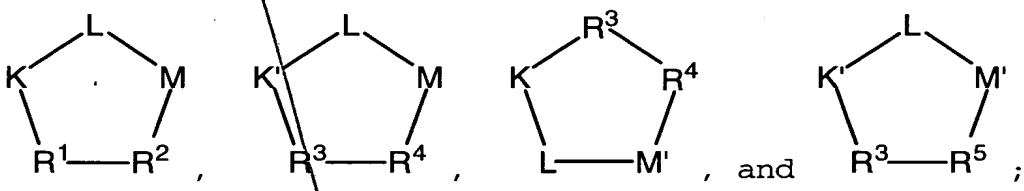
1. A compound, comprising: a targeting moiety and a chelator, wherein the targeting moiety is bound to the chelator, is a peptide or peptidomimetic, and binds to a receptor that is upregulated during angiogenesis and the compound has 0-1 linking groups between the targeting moiety and chelator.

2. A compound according to Claim 1, wherein the targeting moiety is a peptide or a mimetic thereof and the receptor is selected from the group: EGFR, FGFR, PDGFR, Flk-1/KDR, Flt-1, Tek, Tie, neuropilin-1, endoglin, endosialin, Axl, $\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_5\beta_1$, $\alpha_4\beta_1$, $\alpha_1\beta_1$, and $\alpha_2\beta_2$ and the linking group is present between the targeting moiety and chelator.

3. A compound according to Claim 2, the receptor is the integrin $\alpha_v\beta_3$ and the compound is of the formula:

$(Q)_d$-L_n-C_h or $(Q)_d$-L_n-$(C_h)_{d'}$

wherein, Q is a peptide independently selected from the group:



and ;

K is an L-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine, δ-N-2-imidazolinylornithine, δ-N-benzylcarbamoylornithine, and β-2-benzimidazolylacetyl-1,2-diaminopropionic acid;

K' is a D-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine,

δ-N-2-imidazolinylornithine,
δ-N-benzylcarbamoylornithine, and
β-2-benzimidazolylacetyl-1,2-diaminopropionic acid;

L is independently selected at each occurrence from the group: glycine, L-alanine, and D-alanine;

M is L-aspartic acid;

M' is D-aspartic acid;

R^1 is an amino acid substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, phenylalanine, thienylalanine, phenylglycine, cyclohexylalanine, homophenylalanine, 1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, and methionine;

R^2 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, methionine, and 2-aminothiazole-4-acetic acid;

R^3 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine,

D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, and D-methionine;

R^4 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, D-methionine, and 2-aminothiazole-4-acetic acid;

R^5 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-2-aminohexanoic acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-serine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, L-cysteine, L-penicillamine, L-methionine, and 2-aminothiazole-4-acetic acid;

provided that one of R^1, R^2, R^3, R^4, and R^5 in each Q is substituted with a bond to L_n, further provided that when R^2 is 2-aminothiazole-4-acetic acid, K is N-methylarginine, further provided that when R^4 is 2-aminothiazole-4-acetic acid, K and K' are N-methylarginine, and still further provided that when R^5 is 2-aminothiazole-4-acetic acid, K' is N-methylarginine;

d is selected from 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

L_n is a linking group having the formula:

$(CR^6R^7)_g-(W)_h-(CR^{6a}R^{7a})_{g'}-(Z)_k-(W)_{h'}-(CR^8R^9)_{g''}-(W)_{h''}-(CR^{8a}R^{9a})_{g'''}$

provided that g+h+g'+k+h'+g"+h"+g"' is other than 0;

W is independently selected at each occurrence from the group: O, S, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO_2, $(OCH_2CH_2)_s$, $(CH_2CH_2O)_{s'}$, $(OCH_2CH_2CH_2)_{s''}$, $(CH_2CH_2CH_2O)_t$, and $(aa)_{t'}$;

aa is independently at each occurrence an amino acid;

Z is selected from the group: aryl substituted with 0-3 R^{10}, C_{3-10} cycloalkyl substituted with 0-3 R^{10}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{10};

R^6, R^{6a}, R^7, R^{7a}, R^8, R^{8a}, R^9 and R^{9a} are independently selected at each occurrence from the group: H, =O, COOH, SO_3H, PO_3H, C_1-C_5 alkyl substituted with 0-3 R^{10}, aryl substituted with 0-3 R^{10}, benzyl substituted with 0-3 R^{10}, and C_1-C_5 alkoxy substituted with 0-3 R^{10}, $NHC(=O)R^{11}$, $C(=O)NHR^{11}$, $NHC(=O)NHR^{11}$, NHR^{11}, R^{11}, and a bond to C_h;

R^{10} is independently selected at each occurrence from the group: a bond to C_h, $COOR^{11}$, OH, NHR^{11}, SO_3H, PO_3H, aryl substituted with 0-3 R^{11}, C_{1-5} alkyl substituted with 0-1 R^{12}, C_{1-5} alkoxy substituted with 0-1 R^{12}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{11};

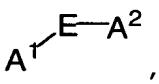
R^{11} is independently selected at each occurrence from the group: H, aryl substituted with 0-1 R^{12}, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms

independently selected from N, S, and O and substituted with 0-1 R^{12}, C_{3-10} cycloalkyl substituted with 0-1 R^{12}, polyalkylene glycol substituted with 0-1 R^{12}, carbohydrate substituted with 0-1 R^{12}, cyclodextrin substituted with 0-1 R^{12}, amino acid substituted with 0-1 R^{12}, polycarboxyalkyl substituted with 0-1 R^{12}, polyazaalkyl substituted with 0-1 R^{12}, peptide substituted with 0-1 R^{12}, wherein the peptide is comprised of 2-10 amino acids, and a bond to C_h;

R^{12} is a bond to C_h;

k is selected from 0, 1, and 2;
h is selected from 0, 1, and 2;
h' is selected from 0, 1, 2, 3, 4, and 5;
h" is selected from 0, 1, 2, 3, 4, and 5;
g is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
g' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
g" is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
g"' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
s is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
s' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
s" is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
t is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
t' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

C_h is a metal bonding unit having a formula selected from the group:



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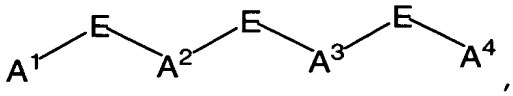

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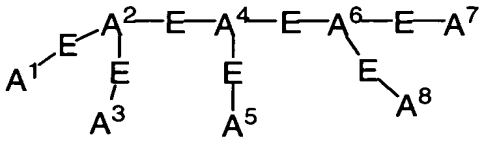
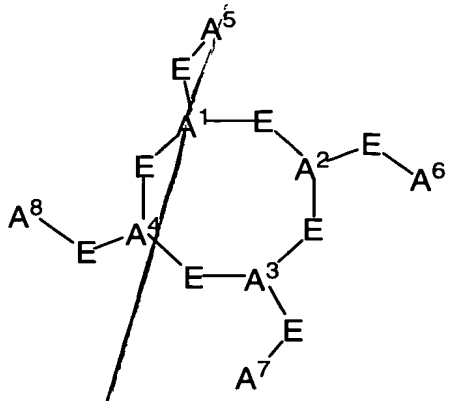



, and ;

A^1, A^2, A^3, A^4, A^5, A^6, A^7, and A^8 are independently selected at each occurrence from the group N, NR^{13}, $NR^{13}R^{14}$, S, SH, S(Pg), O, OH, PR^{13}, $PR^{13}R^{14}$, $P(O)R^{15}R^{16}$, and a bond to L_n;

E is a bond, CH, or a spacer group independently selected at each occurrence from the group: C_1-C_{10} alkyl substituted with 0-3 R^{17}, aryl substituted with 0-3 R^{17}, C_{3-10} cycloalkyl substituted with 0-3 R^{17}, heterocyclo-C_{1-10} alkyl substituted with 0-3 R^{17}, wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C_{6-10} aryl-C_{1-10} alkyl substituted with 0-3 R^{17}, C_{1-10} alkyl-C_{6-10} aryl- substituted with 0-3 R^{17}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{17};

R^{13}, and R^{14} are each independently selected from the group: a bond to L_n, hydrogen, C_1-C_{10} alkyl substituted with 0-3 R^{17}, aryl substituted with 0-3 R^{17}, C_{1-10} cycloalkyl substituted with 0-3 R^{17}, heterocyclo-C_{1-10} alkyl substituted with 0-3 R^{17}, wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C_{6-10} aryl-C_{1-10} alkyl substituted with 0-3 R^{17}, C_{1-10} alkyl-C_{6-10} aryl- substituted with 0-3 R^{17}, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and

substituted with 0-3 R^{17}, and an electron, provided that when one of R^{13} or R^{14} is an electron, then the other is also an electron;

alternatively, R^{13} and R^{14} combine to form $=C(R^{20})(R^{21})$;

R^{15} and R^{16} are each independently selected from the group: a bond to L_n, -OH, C_1-C_{10} alkyl substituted with 0-3 R^{17}, C_1-C_{10} alkyl substituted with 0-3 R^{17}, aryl substituted with 0-3 R^{17}, C_{3-10} cycloalkyl substituted with 0-3 R^{17}, heterocyclo-C_{1-10} alkyl substituted with 0-3 R^{17}, wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C_{6-10} aryl-C_{1-10} alkyl substituted with 0-3 R^{17}, C_{1-10} alkyl-C_{6-10} aryl-substituted with 0-3 R^{17}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{17};

Sub B1 cont

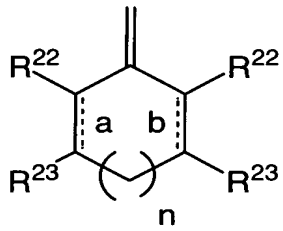
R^{17} is independently selected at each occurrence from the group: a bond to L_n, =O, F, Cl, Br, I, $-CF_3$, -CN, $-CO_2R^{18}$, $-C(=O)R^{18}$, $-C(=O)N(R^{18})_2$, -CHO, $-CH_2OR^{18}$, $-OC(=O)R^{18}$, $-OC(=O)OR^{18a}$, $-OR^{18}$, $-OC(=O)N(R^{18})_2$, $-NR^{19}C(=O)R^{18}$, $-NR^{19}C(=O)OR^{18a}$, $-NR^{19}C(=O)N(R^{18})_2$, $-NR^{19}SO_2N(R^{18})_2$, $-NR^{19}SO_2R^{18a}$, $-SO_3H$, $-SO_2R^{18a}$, $-SR^{18}$, $-S(=O)R^{18a}$, $-SO_2N(R^{18})_2$, $-N(R^{18})_2$, $-NHC(=S)NHR^{18}$, $=NOR^{18}$, NO_2, $-C(=O)NHOR^{18}$, $-C(=O)NHNR^{18}R^{18a}$, $-OCH_2CO_2H$, 2-(1-morpholino)ethoxy, C_1-C_5 alkyl, C_2-C_4 alkenyl, C_3-C_6 cycloalkyl, C_3-C_6 cycloalkylmethyl, C_2-C_6 alkoxyalkyl, aryl substituted with 0-2 R^{18}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

R^{18}, R^{18a}, and R^{19} are independently selected at each occurrence from the group: a bond to L_n, H, C_1-C_6 alkyl, phenyl, benzyl, C_1-C_6 alkoxy, halide, nitro, cyano, and trifluoromethyl;

Pg is a thiol protecting group;

R^{20} and R^{21} are independently selected from the group: H, C_1-C_{10} alkyl, -CN, $-CO_2R^{25}$, $-C(=O)R^{25}$, $-C(=O)N(R^{25})_2$, C_2-C_{10} 1-alkene substituted with 0-3 R^{23}, C_2-C_{10} 1-alkyne substituted with 0-3 R^{23}, aryl substituted with 0-3 R^{23}, unsaturated 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{23}, and unsaturated C_{3-10} carbocycle substituted with 0-3 R^{23};

alternatively, R^{20} and R^{21}, taken together with the divalent carbon radical to which they are attached form:



R^{22} and R^{23} are independently selected from the group: H, R^{24}, C_1-C_{10} alkyl substituted with 0-3 R^{24}, C_2-C_{10} alkenyl substituted with 0-3 R^{24}, C_2-C_{10} alkynyl substituted with 0-3 R^{24}, aryl substituted with 0-3 R^{24}, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{24}, and C_{3-10} carbocycle substituted with 0-3 R^{24};

alternatively, R^{22}, R^{23} taken together form a fused aromatic or a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

a and **b** indicate the positions of optional double bonds and **n** is 0 or 1;

R^{24} is independently selected at each occurrence from the group: =O, F, Cl, Br, I, $-CF_3$, -CN, $-CO_2R^{25}$, $-C(=O)R^{25}$, $-C(=O)N(R^{25})_2$, $-N(R^{25})_3^+$, $-CH_2OR^{25}$, $-OC(=O)R^{25}$, $-OC(=O)OR^{25a}$, $-OR^{25}$, $-OC(=O)N(R^{25})_2$, $-NR^{26}C(=O)R^{25}$, $-NR^{26}C(=O)OR^{25a}$, $-NR^{26}C(=O)N(R^{25})_2$, $-NR^{26}SO_2N(R^{25})_2$, $-NR^{26}SO_2R^{25a}$, $-SO_3H$, $-SO_2R^{25a}$, $-SR^{25}$, $-S(=O)R^{25a}$, $-SO_2N(R^{25})_2$, $-N(R^{25})_2$, $=NOR^{25}$, $-C(=O)NHOR^{25}$, $-OCH_2CO_2H$, and 2-(1-morpholino)ethoxy; and,

R^{25}, R^{25a}, and R^{26} are each independently selected at each occurrence from the group: hydrogen and C_1-C_6 alkyl;

and a pharmaceutically acceptable salt thereof.

4. A compound according to Claim 3, the present invention provides a compound, wherein:

L is glycine;

R^1 is an amino acid, optionally substituted with a bond to L_n, independently selected at each occurrence from the group: L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, tyrosine, phenylalanine, phenylglycine, cyclohexylalanine, homophenylalanine, lysine, ornithine, 1,2-diaminobutyric acid, and 1,2-diaminopropionic acid;

R^2 is an amino acid, optionally substituted with a bond to L_n, independently selected at each occurrence from the group: valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

R^3 is an amino acid, optionally substituted with a bond to L_n, independently selected at each occurrence from the group: D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-tyrosine, D-phenylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, and D-1,2-diaminopropionic acid;

R^4 is an amino acid, optionally substituted with a bond to L_n, independently selected at each occurrence from the group: D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

R^5 is an amino acid, optionally substituted with a bond to L_n, independently selected at each occurrence from the group: L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

d is selected from 1, 2, and 3;

W is independently selected at each occurrence from the group: O, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO_2, $(OCH_2CH_2)_s$, $(CH_2CH_2O)_{s'}$, $(OCH_2CH_2CH_2)_{s''}$, and $(CH_2CH_2CH_2O)_t$,

Z is selected from the group: aryl substituted with 0-1 R^{10}, C_{3-10} cycloalkyl substituted with 0-1 R^{10}, and a 5-10

membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R^{10};

R^6, R^{6a}, R^7, R^{7a}, R^8, R^{8a}, R^9, and R^{9a} are independently selected at each occurrence from the group: H, =O, COOH, SO_3H, C_1-C_5 alkyl substituted with 0-1 R^{10}, aryl substituted with 0-1 R^{10}, benzyl substituted with 0-1 R^{10}, and C_1-C_5 alkoxy substituted with 0-1 R^{10}, $NHC(=O)R^{11}$, $C(=O)NHR^{11}$, $NHC(=O)NHR^{11}$, NHR^{11}, R^{11}, and a bond to C_h;

R^{10} is independently selected at each occurrence from the group: $COOR^{11}$, OH, NHR^{11}, SO_3H, aryl substituted with 0-1 R^{11}, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R^{11}, C_1-C_5 alkyl substituted with 0-1 R^{12}, C_1-C_5 alkoxy substituted with 0-1 R^{12}, and a bond to C_h;

R^{11} is independently selected at each occurrence from the group: H, aryl substituted with 0-1 R^{12}, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R^{12}, polyalkylene glycol substituted with 0-1 R^{12}, carbohydrate substituted with 0-1 R^{12}, cyclodextrin substituted with 0-1 R^{12}, amino acid substituted with 0-1 R^{12}, and a bond to C_h;

k is 0 or 1;
h is 0 or 1;
h' is 0 or 1;
s is selected from 0, 1, 2, 3, 4, and 5;
s' is selected from 0, 1, 2, 3, 4, and 5;
s" is selected from 0, 1, 2, 3, 4, and 5;
t is selected from 0, 1, 2, 3, 4, and 5;

A^1, A^2, A^3, A^4, A^5, A^6, A^7, and A^8 are independently selected at each occurrence from the group: NR^{13}, $NR^{13}R^{14}$, S, SH, S(Pg), OH, and a bond to L_n;

E is a bond, CH, or a spacer group independently selected at each occurrence from the group: C_1-C_{10} alkyl substituted with 0-3 R^{17}, aryl substituted with 0-3 R^{17}, C_{3-10} cycloalkyl substituted with 0-3 R^{17}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{17};

R^{13}, and R^{14} are each independently selected from the group: a bond to L_n, hydrogen, C_1-C_{10} alkyl substituted with 0-3 R^{17}, aryl substituted with 0-3 R^{17}, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{17}, and an electron, provided that when one of R^{13} or R^{14} is an electron, then the other is also an electron;

alternatively, R^{13} and R^{14} combine to form $=C(R^{20})(R^{21})$;

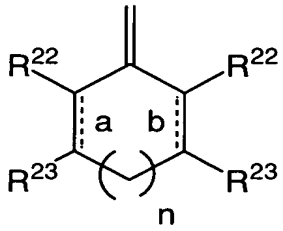
R^{17} is independently selected at each occurrence from the group: a bond to L_n, =O, F, Cl, Br, I, $-CF_3$, -CN, $-CO_2R^{18}$, $-C(=O)R^{18}$, $-C(=O)N(R^{18})_2$, $-CH_2OR^{18}$, $-OC(=O)R^{18}$, $-OC(=O)OR^{18a}$, $-OR^{18}$, $-OC(=O)N(R^{18})_2$, $-NR^{19}C(=O)R^{18}$, $-NR^{19}C(=O)OR^{18a}$, $-NR^{19}C(=O)N(R^{18})_2$, $-NR^{19}SO_2N(R^{18})_2$, $-NR^{19}SO_2R^{18a}$, $-SO_3H$, $-SO_2R^{18a}$, $-S(=O)R^{18a}$, $-SO_2N(R^{18})_2$, $-N(R^{18})_2$, $-NHC(=S)NHR^{18}$, $=NOR^{18}$, $-C(=O)NHNR^{18}R^{18a}$, $-OCH_2CO_2H$, and 2-(1-morpholino)ethoxy;

R^{18}, R^{18a}, and R^{19} are independently selected at each occurrence from the group: a bond to L_n, H, and C_1-C_6 alkyl;

R^{20} and R^{21} are independently selected from the group: H, C_1-C_5 alkyl, $-CO_2R^{25}$, C_2-C_5 1-alkene substituted with 0-3

R^{23}, C_2-C_5 1-alkyne substituted with 0-3 R^{23}, aryl substituted with 0-3 R^{23}, and unsaturated 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{23};

alternatively, R^{20} and R^{21}, taken together with the divalent carbon radical to which they are attached form:



R^{22} and R^{23} are independently selected from the group: H, and R^{24};

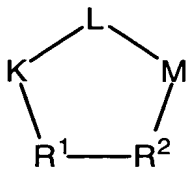
alternatively, R^{22}, R^{23} taken together form a fused aromatic or a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

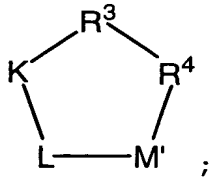
R^{24} is independently selected at each occurrence from the group: $-CO_2R^{25}$, $-C(=O)N(R^{25})_2$, $-CH_2OR^{25}$, $-OC(=O)R^{25}$, $-OR^{25}$, $-SO_3H$, $-N(R^{25})_2$, and $-OCH_2CO_2H$; and,

R^{25} is independently selected at each occurrence from the group: H and C_1-C_3 alkyl.

5. A compound according to Claim 4, the present invention provides a compound, wherein:

Q is a peptide selected from the group:



and


;

R^1 is L-valine, D-valine, D-lysine optionally substituted on the ε amino group with a bond to L_n or L-lysine optionally substituted on the ε amino group with a bond to L_n;

R^2 is L-phenylalanine, D-phenylalanine, D-1-naphthylalanine, 2-aminothiazole-4-acetic acid, L-lysine optionally substituted on the ε amino group with a bond to L_n or tyrosine, the tyrosine optionally substituted on the hydroxy group with a bond to L_n;

R^3 is D-valine, D-phenylalanine, or L-lysine optionally substituted on the ε amino group with a bond to L_n;

R^4 is D-phenylalanine, D-tyrosine substituted on the hydroxy group with a bond to L_n, or L-lysine optionally substituted on the ε amino group with a bond to L_n;

provided that one of R^1 and R^2 in each Q is substituted with a bond to L_n, and further provided that when R^2 is 2-aminothiazole-4-acetic acid, K is N-methylarginine;

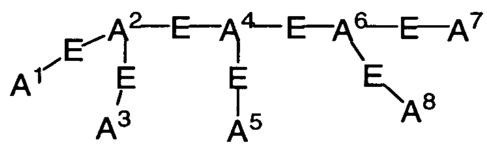
d is 1 or 2;

W is independently selected at each occurrence from the group: NHC(=O), C(=O)NH, C(=O), $(CH_2CH_2O)_{s'}$, and $(CH_2CH_2CH_2O)_t$;

R^6, R^{6a}, R^7, R^{7a}, R^8, R^{8a}, R^9, and R^{9a} are independently selected at each occurrence from the group: H, $NHC(=O)R^{11}$, and a bond to C_h;

k is 0;

h" is selected from 0, 1, 2, and 3;
g is selected from 0, 1, 2, 3, 4, and 5;
g' is selected from 0, 1, 2, 3, 4, and 5;
g" is selected from 0, 1, 2, 3, 4, and 5;
g"' is selected from 0, 1, 2, 3, 4, and 5;
s' is 1 or 2;
t is 1 or 2;

C_h is 

;

A^1 is selected from the group: OH, and a bond to L_n;

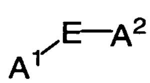
A^2, A^4, and A^6 are each N;

A^3, A^5, and A^8 are each OH;

A^7 is a bond to L_n or NH-bond to L_n;

E is a C_2 alkyl substituted with 0-1 R^{17};

R^{17} is =O;

alternatively, C_h is 

;

A^1 is NH_2 or $N=C(R^{20})(R^{21})$;

E is a bond;

A^2 is NHR^{13};

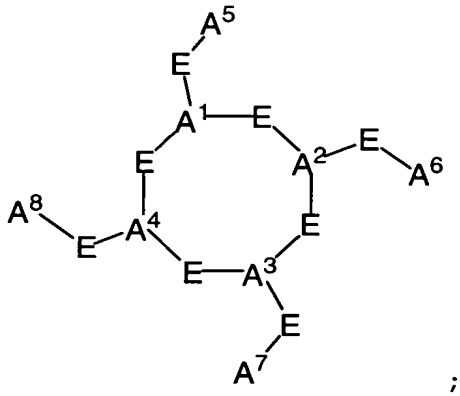
R^{13} is a heterocycle substituted with R^{17}, the heterocycle being selected from pyridine and pyrimidine;

R^{17} is selected from a bond to L_n, $C(=O)NHR^{18}$, and $C(=O)R^{18}$;

R^{18} is a bond to L_n;

R^{24} is selected from the group: $-CO_2R^{25}$, $-OR^{25}$, $-SO_3H$, and $-N(R^{25})_2$;

R^{25} is independently selected at each occurrence from the group: hydrogen and methyl;



alternatively, C_h is ;

A^1, A^2, A^3, and A^4 are each N;

A^5, A^6, and A^8 are each OH;

A^7 is a bond to L_n;

E is a C_2 alkyl substituted with 0-1 R^{17}; and,

R^{17} is =O.

6. A compound according to Claim 3, the present invention provides a compound selected from the group:

(a) cyclo{Arg-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};

(b) cyclo{Arg-Gly-Asp-D-Tyr((N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-18-

amino-14-aza-4,7,10-oxy-15-oxo-octadecoyl)-3-aminopropyl)-Val};

(c) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp})-cyclo{D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp};

(d) cyclo(Arg-Gly-Asp-D-Tyr-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};

(e) cyclo{Arg-Gly-Asp-D-Phe-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};

(f) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

(g) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Phe-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

(h) cyclo{Arg-Gly-Asp-D-Nal-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};

(i) [2-[[[5-[carbonyl]-2-pyridinyl]-hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{Lys-Arg-Gly-Asp-D-Nal})-cyclo{Lys-Arg-Gly-Asp-D-Nal};

(j) cyclo{Arg-Gly-Asp-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Val};

(k) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{Lys-D-Val-Arg-Gly-Asp})-cyclo{Lys-D-Val-Arg-Gly-Asp};

(l) {cyclo(Arg-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly};

(m) cyclo{D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Phe-D-Asp-Gly-Arg};

(n) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{D-Lys-D-Phe-D-Asp-Gly-Arg})-cyclo{D-Lys-D-Phe-D-Asp-Gly-Arg};

(o) cyclo{D-Phe-D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Asp-Gly-Arg};

(p) cyclo{N-Me-Arg-Gly-Asp-ATA-D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};

(q) cyclo{Cit-Gly-Asp-D-Phe-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};

(r) 2-(1,4,7,10-tetraaza-4,7,10-tris(carboxymethyl)-1-cyclododecyl)acetyl-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

(s) cyclo{Arg-Gly-Asp-D-Phe-Lys(DTPA)};

(t) cyclo{Arg-Gly-Asp-D-Phe-Lys}$_2$(DTPA);

(u) Cyclo{Arg-Gly-Asp-D-Tyr(N-DTPA-3-aminopropyl)-Val};

(v) cyclo{Orn(d-N-2-Imidazolinyl)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};

(w) cyclo{Lys-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};

(x) cyclo{Cys(2-aminoethyl)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};

(y) cyclo{HomoLys-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};

(z) cyclo{Orn(d-N-Benzylcarbamoyl)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};

(aa) cyclo{Dap(b-(2-benzimidazolylacetyl))-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};

(bb) cyclo{Orn(d-N-2-Imidazolinyl)-Gly-Asp-D-Phe-Lys(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};

(cc) cyclo{Orn(d-N-Benzylcarbamoyl)-Gly-Asp-D-Phe-Lys(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};

(dd) cyclo{Lys-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly};

(ee) cyclo{Orn(d-N-Benzylcarbamoyl)-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly}; and,

(ff) cyclo{Orn(d-N-2-Imidazolinyl)-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly};

or a pharmaceutically acceptable salt form thereof.

7. A kit comprising a compound of Claim 3, or a pharmaceutically acceptable salt form thereof and a pharmaceutically acceptable carrier.

8. A kit according to Claim 7, wherein the kit further comprises one or more ancillary ligands and a reducing agent.

9. A kit according to Claim 8, wherein the ancillary ligands are tricine and TPPTS.

10. A kit according to Claim 9, wherein the reducing agent is tin(II).

11. A diagnostic or therapeutic metallopharmaceutical composition, comprising: a metal, a chelator capable of chelating the metal and a targeting moiety, wherein the targeting moiety is bound to the chelator, is a peptide or peptidomimetic and binds to a receptor that is upregulated during angiogenesis and the compound has 0-1 linking groups between the targeting moiety and chelator.

12. A composition according to Claim 11, wherein the metallopharmaceutical is a diagnostic radiopharmaceutical, the metal is a radioisotope selected from the group: ^{99m}Tc, ^{95}Tc, ^{111}In, ^{62}Cu, ^{64}Cu, ^{67}Ga, and ^{68}Ga, the targeting moiety is a peptide or a mimetic thereof and the receptor is selected from

the group: EGFR, FGFR, PDGFR, Flk-1/KDR, Flt-1, Tek, Tie, neuropilin-1, endoglin, endosialin, Axl, $\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_5\beta_1$, $\alpha_4\beta_1$, $\alpha_1\beta_1$, and $\alpha_2\beta_2$ and the linking group is present between the targeting moiety and chelator.

13. A composition according to Claim 12, wherein the targeting moiety is a cyclic pentapeptide and the receptor is $\alpha_v\beta_3$.

14. A composition according to Claim 13, wherein the radioisotope is ^{99m}Tc or ^{95}Tc, the radiopharmaceutical further comprises a first ancillary ligand and a second ancillary ligand capable of stabilizing the radiopharmaceutical.

15. A composition according to Claim 14, wherein the radioisotope is ^{99m}Tc.

16. A composition according to Claim 15, wherein the radiopharmaceutical is selected from the group:

^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-Gly-Asp-D-Tyr(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-3-aminopropyl)-Val));

^{99m}Tc(tricine)(TPPMS)(cyclo(Arg-D-Val-D-Tyr(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-3-aminopropyl)-D-Asp-Gly));

^{99m}Tc(tricine)(TPPDS)(cyclo(Arg-D-Val-D-Tyr(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-3-aminopropyl)-D-Asp-Gly));

^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-D-Val-D-Tyr(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-3-aminopropyl)-D-Asp-Gly));

^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-Gly-Asp-D-Phe-Lys(N-[[5-[carbonyl]-2-pyridinyl]diazenido])));

^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-Gly-Asp-D-Tyr-Lys(N-[[5-[carbonyl]-2-pyridinyl]diazenido]))); ^{99m}Tc(tricine)(TPPTS)([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Phe-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe}); ^{99m}Tc(tricine)(TPPTS)(cyclo{Arg-Gly-Asp-D-Nal-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])}); ^{99m}Tc(tricine)(TPPTS)([2-[[[5-[carbonyl]-2-pyridinyl]-hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{Lys-Arg-Gly-Asp-D-Nal})-cyclo{Lys-Arg-Gly-Asp-D-Nal}); ^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-Gly-Asp-D-Tyr((N-[[5-[carbonyl]-2-pyridinyl]diazenido]-18-amino-14-aza-4,7,10-oxy-15-oxo-octadecoyl)-3-aminopropyl)-Val)); ^{99m}Tc(tricine)(TPPTS)(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-Glu(O-cyclo(Lys-Arg-Gly-Asp-D-Phe))-O-cyclo(Lys-Arg-Gly-Asp-D-Phe)); ^{99m}Tc(tricine)(TPPTS)(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-Glu(O-cyclo(D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp))-O-cyclo(D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp)); ^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-Gly-Asp-Lys(N-[[5-[carbonyl]-2-pyridinyl]diazenido])-D-Val)); ^{99m}Tc(tricine)(TPPTS)(cyclo{D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Phe-D-Asp-Gly-Arg}); ^{99m}Tc(tricine)(TPPTS)([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-

Glu(cyclo{D-Lys-D-Phe-D-Asp-Gly-Arg})-cyclo{D-Lys-D-Phe-D-Asp-Gly-Arg});

^{99m}Tc(tricine)(TPPTS)(cyclo{D-Phe-D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Asp-Gly-Arg});

^{99m}Tc(tricine)(TPPTS)(cyclo(N-Me-Arg-Gly-Asp-ATA-D-Lys(N-[[5-[carbonyl]-2-pyridinyl]diazenido])));

^{99m}Tc(tricine)(TPPTS)(cyclo{Cit-Gly-Asp-D-Phe-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])}); and,

^{99m}Tc(tricine)(1,2,4-triazole)(cyclo(Arg-Gly-Asp-D-Tyr(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-3-aminopropyl)-Val)).

17. A composition according to Claim 13, wherein the radioisotope is ^{111}In.

18. A composition according to Claim 17, wherein the radiopharmaceutical is selected from the group:

(DOTA-^{111}In)-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

cyclo(Arg-Gly-Asp-D-Phe-Lys(DTPA-^{111}In)); and,

cyclo(Arg-Gly-Asp-D-Phe-Lys)$_2$(DTPA-^{111}In).

19. A composition according to Claim 11, wherein the metallopharmaceutical is a therapeutic radiopharmaceutical, the metal is a radioisotope selected from the group: ^{186}Re, ^{188}Re, ^{153}Sm, ^{166}Ho, ^{177}Lu, ^{149}Pm, ^{90}Y, ^{212}Bi, ^{103}Pd, ^{109}Pd, ^{159}Gd, ^{140}La, ^{198}Au, ^{199}Au, ^{169}Yb, ^{175}Yb, ^{165}Dy, ^{166}Dy, ^{67}Cu,

^{105}Rh, ^{111}Ag, and ^{192}Ir, the targeting moiety is a peptide or a mimetic thereof and the receptor is selected from the group: EGFR, FGFR, PDGFR, Flk-1/KDR, Flt-1, Tek, Tie, neuropilin-1, endoglin, endosialin, Axl, $\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_5\beta_1$, $\alpha_4\beta_1$, $\alpha_1\beta_1$, and $\alpha_2\beta_2$ and the linking group is present between the targeting moiety and chelator.

20. A composition according to Claim 19, wherein the targeting moiety is a cyclic pentapeptide and the receptor is $\alpha_v\beta_3$.

21. A composition according to Claim 20, wherein the radioisotope is ^{153}Sm.

22. A composition according to Claim 21, wherein the radiopharmaceutical is selected from the group:

cyclo(Arg-Gly-Asp-D-Phe-Lys(DTPA-^{153}Sm));

cyclo(Arg-Gly-Asp-D-Phe-Lys)$_2$(DTPA-^{153}Sm); and,

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(^{153}Sm)-3-aminopropyl)-Val).

23. A composition according to Claim 20, wherein the radioisotope is ^{177}Lu.

24. A composition according to Claim 23, wherein the radiopharmaceutical is selected from the group:

cyclo(Arg-Gly-Asp-D-Phe-Lys(DTPA-^{177}Lu));

(DOTA-^{177}Lu)-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

cyclo(Arg-Gly-Asp-D-Phe-Lys)$_2$(DTPA-^{177}Lu); and,

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(^{177}Lu)-3-aminopropyl)-Val).

25. A composition according to Claim 20, wherein the radioisotope is ^{90}Y.

26. A composition according to Claim 25, wherein the radiopharmaceutical is:

(DOTA-^{90}Y)-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

27. A composition according to Claim 11, wherein the metallopharmaceutical is a MRI contrast agent, the metal is a paramagnetic metal ion selected from the group: Gd(III), Dy(III), Fe(III), and Mn(II), the targeting moiety is a peptide or a mimetic thereof and the receptor is selected from the group: EGFR, FGFR, PDGFR, Flk-1/KDR, Flt-1, Tek, Tie, neuropilin-1, endoglin, endosialin, Axl, $\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_5\beta_1$, $\alpha_4\beta_1$, $\alpha_1\beta_1$, and $\alpha_2\beta_2$ and the linking group is present between the targeting moiety and chelator.

28. A composition according to Claim 27, wherein the targeting moiety is a cyclic pentapeptide and the receptor is $\alpha_v\beta_3$.

29. A composition according to Claim 28, wherein the metal ion is Gd(III).

30. A composition according to Claim 29, wherein the contrast agent is:

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(Gd(III))-3-aminopropyl)-Val).

31. A composition according to Claim 11, wherein the metallopharmaceutical is a X-ray contrast agent, the metal is selected from the group: Re, Sm, Ho, Lu, Pm, Y, Bi, Pd, Gd, La, Au, Au, Yb, Dy, Cu, Rh, Ag, and Ir, the targeting moiety is a cyclic pentapeptide, the receptor is $\alpha_v\beta_3$, and the linking group is present between the targeting moiety and chelator.

32. A method of treating rheumatoid arthritis in a patient comprising: administering a therapeutic radiopharmaceutical of Claim 11 capable of localizing in new angiogenic vasculature to a patient by injection or infusion.

33. A method of treating cancer in a patient comprising: administering to a patient in need thereof a therapeutic radiopharmaceutical of Claim 11 by injection or infusion.

34. A method of imaging formation of new blood vessels in a patient comprising: (1) administering a diagnostic radiopharmaceutical, a MRI contrast agent, or a X-ray contrast agent of of Claim 11 to a patient by injection or infusion; (2) imaging the area of the patient wherein the desired formation of new blood vessels is located.

35. A method of imaging cancer in a patient comprising: (1) administering a diagnostic radiopharmaceutical of Claim 12 to a patient by injection or infusion; (2) imaging the patient

using planar or SPECT gamma scintigraphy, or positron emission tomography.

36. A method of imaging cancer in a patient comprising: (1) administering a MRI contrast agent of Claim 27; and (2) imaging the patient using magnetic resonance imaging.

37. A method of imaging cancer in a patient comprising: (1) administering a X-ray contrast agent of Claim 31; and (2) imaging the patient using X-ray computed tomography.

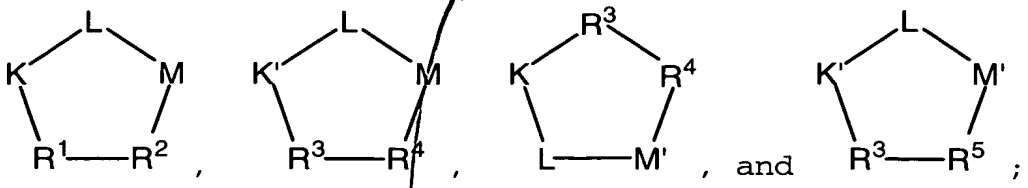
38. A compound, comprising: a targeting moiety and a surfactant, wherein the targeting moiety is bound to the surfactant, is a peptide or peptidomimetic, and binds to a receptor that is upregulated during angiogenesis and the compound has 0-1 linking groups between the targeting moiety and surfactant.

39. A compound according to Claim 38, wherein the targeting moiety is a peptide or a mimetic thereof and the receptor is selected from the group: EGFR, FGFR, PDGFR, Flk-1/KDR, Flt-1, Tek, Tie, neuropilin-1, endoglin, endosialin, Axl, $\alpha_v\beta_3$, $\alpha_v\beta_5$, $\alpha_5\beta_1$, $\alpha_4\beta_1$, $\alpha_1\beta_1$, and $\alpha_2\beta_2$ and the linking group is present between the targeting moiety and surfactant.

40. A compound according to Claim 39, wherein the receptor is the integrin $\alpha_v\beta_3$ and the compound is of the formula:

$$(Q)_d\text{-}L_n\text{-}S_f$$

wherein, Q is a cyclic pentapeptide independently selected from the group:



, , , and ;

K is an L-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine, δ-N-2-imidazolinylornithine, δ-N-benzylcarbamoylornithine, and β-2-benzimidazolylacetyl-1,2-diaminopropionic acid;

K' is a D-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine, δ-N-2-imidazolinylornithine, δ-N-benzylcarbamoylornithine, and β-2-benzimidazolylacetyl-1,2-diaminopropionic acid;

L is independently selected at each occurrence from the group: glycine, L-alanine, and D-alanine;

M is L-aspartic acid;

M' is D-aspartic acid;

R^1 is an amino acid substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, phenylalanine, thienylalanine, phenylglycine, cyclohexylalanine, homophenylalanine, 1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, and methionine;

R^2 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, methionine, and 2-aminothiazole-4-acetic acid;

R^3 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, and D-methionine;

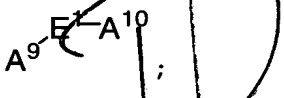
R^4 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, D-methionine, and 2-aminothiazole-4-acetic acid;

R^5 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-2-aminohexanoic

acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-serine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, L-cysteine, L-penicillamine, L-methionine, and 2-aminothiazole-4-acetic acid;

provided that one of R^1, R^2, R^3, R^4, and R^5 in each Q is substituted with a bond to L_n, further provided that when R^2 is 2-aminothiazole-4-acetic acid, K is N-methylarginine, further provided that when R^4 is 2-aminothiazole-4-acetic acid, K and K' are N-methylarginine, and still further provided that when R^5 is 2-aminothiazole-4-acetic acid, K' is N-methylarginine;

d is selected from 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

S_f is a surfactant which is a lipid or a compound of the formula:  ;

A^9 is selected from the group: OH and OR^{27};

A^{10} is OR^{27};

R^{27} is $C(=O)C_{1-20}$ alkyl;

E^1 is C_{1-10} alkylene substituted with 1-3 R^{28};

R^{28} is independently selected at each occurrence from the group: R^{30}, $-PO_3H-R^{30}$, =O, $-CO_2R^{29}$, $-C(=O)R^{29}$, $-C(=O)N(R^{29})_2$, $-CH_2OR^{29}$, $-OR^{29}$, $-N(R^{29})_2$, C_1-C_5 alkyl, and C_2-C_4 alkenyl;

R^{29} is independently selected at each occurrence from the group: R^{30}, H, C_1-C_6 alkyl, phenyl, benzyl, and trifluoromethyl;

R^{30} is a bond to L_n;

L_n is a linking group having the formula:

$(CR^6R^7)_g-(W)_h-(CR^{6a}R^{7a})_{g'}-(Z)_k-(W)_{h'}-(CR^8R^9)_{g''}-(W)_{h''}-(CR^{8a}R^{9a})_{g'''}$

W is independently selected at each occurrence from the group: O, S, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO_2, $(OCH_2CH_2)_{20-200}$, $(CH_2CH_2O)_{20-200}$, $(OCH_2CH_2CH_2)_{20-200}$, $(CH_2CH_2CH_2O)_{20-200}$, and $(aa)_{t'}$;

aa is independently at each occurrence an amino acid;

Z is selected from the group: aryl substituted with 0-3 R^{10}, C_{3-10} cycloalkyl substituted with 0-3 R^{10}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{10};

R^6, R^{6a}, R^7, R^{7a}, R^8, R^{8a}, R^9 and R^{9a} are independently selected at each occurrence from the group: H, =O, COOH, SO_3H, PO_3H, C_1-C_5 alkyl substituted with 0-3 R^{10}, aryl substituted with 0-3 R^{10}, benzyl substituted with 0-3 R^{10}, and C_1-C_5 alkoxy substituted with 0-3 R^{10}, NHC(=O)R^{11}, C(=O)NHR^{11}, NHC(=O)NHR^{11}, NHR^{11}, R^{11}, and a bond to S_f;

R^{10} is independently selected at each occurrence from the group: a bond to S_f, COOR^{11}, OH, NHR^{11}, SO_3H, PO_3H, aryl substituted with 0-3 R^{11}, C_{1-5} alkyl substituted with 0-1 R^{12}, C_{1-5} alkoxy substituted with 0-1 R^{12}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{11};

R^{11} is independently selected at each occurrence from the group: H, aryl substituted with 0-1 R^{12}, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms

independently selected from N, S, and O and substituted with 0-1 R^{12}, C_{3-10} cycloalkyl substituted with 0-1 R^{12}, amino acid substituted with 0-1 R^{12}, and a bond to S_f;

R^{12} is a bond to S_f;

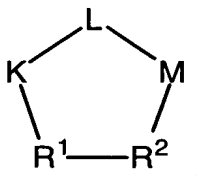
k is selected from 0, 1, and 2;
h is selected from 0, 1, and 2;
h' is selected from 0, 1, 2, 3, 4, and 5;
h" is selected from 0, 1, 2, 3, 4, and 5;
g is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
g' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
g" is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
g"' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
t' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

and a pharmaceutically acceptable salt thereof.

41. A compound according to Claim 40, wherein the compound is of the formula:

$$Q\text{-}L_n\text{-}S_f$$

wherein, Q is a cyclic pentapeptide independently selected from the group:



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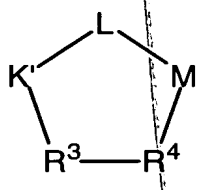

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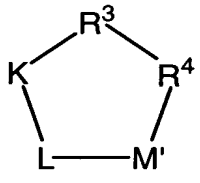
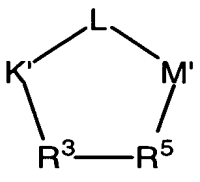


, and


;

K is an L-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine, δ-N-2-imidazolinylornithine, δ-N-benzylcarbamoylornithine, and β-2-benzimidazolylacetyl-1,2-diaminopropionic acid;

K' is a D-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine, δ-N-2-imidazolinylornithine, δ-N-benzylcarbamoylornithine, and β-2-benzimidazolylacetyl-1,2-diaminopropionic acid;

L is independently selected at each occurrence from the group: glycine, L-alanine, and D-alanine;

M is L-aspartic acid;

M' is D-aspartic acid;

R^1 is an amino acid substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, phenylalanine, thienylalanine, phenylglycine, cyclohexylalanine, homophenylalanine, 1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, and methionine;

R^2 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, methionine, and 2-aminothiazole-4-acetic acid;

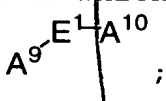
R^3 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group:

glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, and D-methionine;

R^4 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, D-methionine, and 2-aminothiazole-4-acetic acid;

R^5 is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-2-aminohexanoic acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-serine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, L-cysteine, L-penicillamine, L-methionine, and 2-aminothiazole-4-acetic acid;

provided that one of R^1, R^2, R^3, R^4, and R^5 in each Q is substituted with a bond to L_n, further provided that when R^2 is 2-aminothiazole-4-acetic acid, K is N-methylarginine, further provided that when R^4 is 2-aminothiazole-4-acetic acid, K and K' are N-methylarginine, and still further provided that when R^5 is 2-aminothiazole-4-acetic acid, K' is N-methylarginine;

S_f is a surfactant which is a lipid or a compound of the formula:  ;

A^9 is OR^{27};

A^{10} is OR^{27};

R^{27} is $C(=O)C_{1-15}$ alkyl;

E^1 is C_{1-4} alkylene substituted with 1-3 R^{28};

R^{28} is independently selected at each occurrence from the group: R^{30}, $-PO_3H-R^{30}$, =O, $-CO_2R^{29}$, $-C(=O)R^{29}$, $-CH_2OR^{29}$, $-OR^{29}$, and C_1-C_5 alkyl;

R^{29} is independently selected at each occurrence from the group: R^{30}, H, C_1-C_6 alkyl, phenyl, and benzyl;

R^{30} is a bond to L_n;

L_n is a linking group having the formula:

$$(CR^6R^7)_g-(W)_h-(CR^{6a}R^{7a})_{g'}-(Z)_k-(W)_{h'}-(CR^8R^9)_{g''}-(W)_{h''}-(CR^{8a}R^{9a})_{g'''}$$

W is independently selected at each occurrence from the group: O, S, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO_2, $(OCH_2CH_2)_{20-200}$, $(CH_2CH_2O)_{20-200}$, $(OCH_2CH_2CH_2)_{20-200}$, $(CH_2CH_2CH_2O)_{20-200}$, and $(aa)_{t'}$;

aa is independently at each occurrence an amino acid;

Z is selected from the group: aryl substituted with 0-3 R^{10}, C_{3-10} cycloalkyl substituted with 0-3 R^{10}, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{10};

R^6, R^{6a}, R^7, R^{7a}, R^8, R^{8a}, R^9 and R^{9a} are independently selected at each occurrence from the group: H, =O, C_1-C_5 alkyl substituted with 0-3 R^{10}, and C_1-C_5 alkoxy substituted with 0-3 R^{10}, and a bond to S_f;

R^{10} is independently selected at each occurrence from the group: a bond to S_f, $COOR^{11}$, OH, NHR^{11}, C_{1-5} alkyl substituted with 0-1 R^{12}, and C_{1-5} alkoxy substituted with 0-1 R^{12};

R^{11} is independently selected at each occurrence from the group: H, aryl substituted with 0-1 R^{12}, C_{3-10} cycloalkyl substituted with 0-1 R^{12}, amino acid substituted with 0-1 R^{12}, and a bond to S_f;

R^{12} is a bond to S_f;

k is selected from 0, 1, and 2;
h is selected from 0, 1, and 2;
h' is selected from 0, 1, 2, 3, 4, and 5;
h" is selected from 0, 1, 2, 3, 4, and 5;
g is selected from 0, 1, 2, 3, 4, and 5;
g' is selected from 0, 1, 2, 3, 4, and 5;
g" is selected from 0, 1, 2, 3, 4, and 5;
g"' is selected from 0, 1, 2, 3, 4, and 5;
s is selected from 0, 1, 2, 3, 4, and 5;
s' is selected from 0, 1, 2, 3, 4, and 5;
s" is selected from 0, 1, 2, 3, 4, and 5;
t is selected from 0, 1, 2, 3, 4, and 5;
t' is selected from 0, 1, 2, 3, 4, and 5;

and a pharmaceutically acceptable salt thereof.

42. A compound according to Claim 41, wherein the present invention provides a compound selected from the group:

1-(1,2-Dipalmitoyl-sn-glycero-3-phosphoethanolamino)-12-(cyclo(Arg-Gly-Asp-D-Phe-Lys)-dodecane-1,12-dione;

1-(1,2-Dipalmitoyl-sn-glycero-3-phosphoethanolamino)-12-((ω-amino-PEG_{3400}-α-carbonyl)-cyclo(Arg-Gly-Asp-D-Phe-Lys))-dodecane-1,12-dione; and,

1-(1,2-Dipalmitoyl-sn-glycero-3-phosphoethanolamino)-12-((ω-amino-PEG_{3400}-α-carbonyl)-Glu-(cyclo(Arg-Gly-Asp-D-Phe-Lys))$_2$)-Dodecane-1,12-dione.

43. An ultrasound contrast agent composition, comprising:

(a) a compound of Claim 40, comprising: a cyclic pentapeptide that binds to the integrin $\alpha_v\beta_3$, a surfactant and a linking group between the cyclicpentapeptide and the surfactant;

(b) a parenterally acceptable carrier; and,

(c) an echogenic gas.

44. An ultrasound contrast agent composition, further comprising: 1,2-dipalmitoyl-sn-glycero-3-phosphotidic acid, 1,2-dipalmitoyl-sn-glycero-3-phosphatidylcholine, and N-(methoxypolyethylene glycol 5000 carbamoyl)-1,2-dipalmitoyl-sn-glycero-3-phosphatidylethanolamine.

45. An ultrasound contrast agent composition, wherein, the echogenic gas is a C_{2-5} perfluorocarbon.

46. A method of imaging cancer in a patient comprising: (1) administering, by injection or infusion, a ultrasound contrast agent composition of Claim 40 to a patient; and (2) imaging the patient using sonography.

47. A method of imaging formation of new blood vessels in a patient comprising: (1) administering, by injection or infusion, a ultrasound contrast agent composition of of Claim 40 to a patient; (2) imaging the area of the patient wherein the desired formation of new blood vessels is located.

48. A therapeutic radiopharmaceutical composition, comprising:

(a) a therapeutic radiopharmaceutical of Claim 11; and,

(b) a parenterally acceptable carrier.

49. A diagnostic radiopharmaceutical composition, comprising:

(a) a diagnostic radiopharmaceutical, a MRI contrast agent, or a X-ray contrast agent of Claim 11; and,

(b) a parenterally acceptable carrier.

50. A therapeutic radiopharmaceutical composition, comprising: a radiolabelled targeting moiety, wherein the targeting moiety is a compound Q of Claim 3 and the radiolabel is a therapeutic isotope selected from the group: ^{35}S, ^{32}P, ^{125}I, ^{131}I, and ^{211}At.

51. A therapeutic radiopharmaceutical composition, comprising: a radiolabelled targeting moiety, wherein the targeting moiety is a compound Q of Claim 5 and the radiolabel is a therapeutic isotope which is ^{131}I.